



Regular Physical Exercise And Self Acceptance In Elderly Women: An Experimental Study

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Abstract: In positive mental health, self-acceptance promotes inner harmony, reduces anxiety and depression, and enhances personal growth and life satisfaction, laying the foundation for meaningful relationships and overall emotional resilience. Hence self acceptance is an integral part of positive mental health. Studies in this area have strongly advocated the benefits of regular physical exercise in enhancing mood states but its efficacy in improving self-acceptance component of positive mental health is not conclusive with a lack of scientific studies in the elderly population. 100 elderly women from Raipur district of Chhattisgarh were selected purposively. Only those women with low levels of self-acceptance were selected. 50 elderly women were placed in the experimental group while the remaining 50 elderly women constituted the control group. To assess self-acceptance in elderly females, a positive mental health inventory of Agashe and Helode (2007) was used. The results reveal a significant increase in self acceptance of elderly women of the experimental group during the 06 months study period ($F=48.11, p<.01$). Although a significant difference in self acceptance of elderly women was also observed ($F=10.49, p<.01$) but it lacks uniformity. The gain score comparison further revealed that the self acceptance of elderly women from the experimental group was increased significantly as compared to elderly women in the control group. It was concluded that the six-month interventional physical exercise program proved effective in improving the self-acceptance component of positive mental health among elderly women. Therefore, integrating a structured physical exercise routine into their daily lives is recommended to promote greater self-acceptance.

Index Terms - Interventional physical exercise program, Elderly women, self-acceptance

Introduction

A key component described in positive mental health is self-acceptance. The meaning of the term self-acceptance is accepting our strengths, weaknesses and shortcomings. Self-acceptance is recognition of work done by a person irrespective of achievements, mistakes during their work or criticism made by others. With a fair amount of self-acceptance, a person can face life challenges with confidence and honesty because of fair knowledge of own weaknesses and strengths. There is no condition involved in self-acceptance which is the opposite of self-esteem where a comparison of a person's achievements is made with the yardstick of some norms. When a person develops self-acceptance, he consolidates his mental state which is essential for optimism, resilience and emotional balance. When a person accepts himself, his reliance on others for approval is less because he is not afraid of rejection. Hence self-acceptance, allows us to live a happy life while handling challenges effectively and thereby grow continuously as human being. Strupp and Hadley (1977) also conceived mental health in its positive perspectives. This model has considered self-acceptance, ego strength and philosophy of human nature/life as the major components of positive mental health. In positive mental health, self-acceptance promotes inner harmony, reduces anxiety and depression, and enhances personal growth and life satisfaction, laying the foundation for meaningful relationships and overall emotional resilience. Hence self-acceptance is an integral part of positive mental health.

A common notion used these days is "India is greying". It means that the ageing population in India is growing steadily due to improved healthcare facilities. This shows that advancement in medical sciences also comes with certain problems. Elderly people need care and India's geriatric healthcare is already burdened with a lack of skilled resources and economic constraints. Hence it is essential to look after the positive mental health aspect of the elderly population and to maintain and promote it several therapeutic measures are thought of and regular physical exercise is considered as one such therapy. A study conducted by Fluetsch et al. (2019) in their study reported that regular exercise promotes mental health by increasing the feeling of happiness. Studies in this area have strongly advocated the benefits of regular physical exercise in enhancing mood states but its efficacy in improving self-acceptance component of positive mental health is not conclusive due to lack of scientific studies. Hence the present study was planned.

REVIEW OF LITERATURE

The efficacy of regular physical activity and exercise on the positive aspect of mental health has been reported by a number of researchers such as Motaharinez had et al. (2016), De Oliveira et al. (2019), Maung et al. (2022), Hou et al. (2024). These studies have reported that regular participation in physical exercise boosts mood states in the elderly thereby reducing the symptoms of anxiety and depression. These studies have also emphasized the role of physical exercise in managing mental health issues in the elderly.

Objective of the Study

To assess the effect of interventional physical exercise on the self acceptance component of positive mental health of elderly women.

Hypothesis

It was hypothesized that six months of supervised interventional physical exercise would significantly improve self-acceptance of elderly women.

Methodology

Sample:

100 elderly women from Raipur district of Chhattisgarh were selected purposively. Only those women with low level of self-acceptance were selected. 50 elderly women were placed in the experimental group while the remaining 50 elderly women constituted the control group.

Tools

Positive Mental Health Inventory

To assess self-acceptance in elderly females, a positive mental health inventory of Agashe and Helode (2007) was used. This inventory consists of 36 items based on components such as self-acceptance, ego-strength and philosophy of life respectively. The test-retest reliability coefficient of 0.723 proves the reliability of this inventory while the inventory enjoys sufficient face validity. Only those items concerned with self-acceptance were scored off.

Physical Exercise Program:

The six-month interventional physical exercise protocol was based on the following :

Warm-up

Upper Body

1. Neck rotation - (Head turns), 2. Neck side stretch (Head tilts), 3. Neck flexion/extension, 4. Hand flexion / extension, 5. Prayer Stretch, 6. Elbow flexion/extension, 7. Shoulder circles, 8. Shoulder and upper back stretch, 9. Chest stretch, 10. Shoulder stretch, 11. Car and cow stretch and 12. Side bends.

Lower Body

1. Side stretch, 2. Chest to knee, 3. Knee to chest, 4. Rotators stretch, 5. Hamstring stretch, 6. Ankle circles, 7. Standing quadriceps stretch, 8. Standing calf stretch

Cool down

Procedure

100 elderly women with low levels self-acceptance were selected and randomly placed in experimental and control groups with 50 subjects in each group. The data on positive mental health was collected after 02 months, 04 months and 06 months since the beginning of the study period. After scoring and tabulation for self acceptance dimension of positive mental health, the data was analysed. Results are given in the following tables.

RESULT AND DISCUSSION

Table 1
Descriptive Statistics of the Self-Acceptance Component of Positive Mental Health
in Experimental Group by Study Periods

Study Periods	N	Self-Acceptance (Experimental Group)	
		Mean	S.D.
Pre-test	50	4.44	1.31
After 02 months	50	5.22	1.13
After 04 months	50	5.68	0.95
After 06 months: Post-test	50	6.22	0.76

Table 1 (a) Within Subject Repeated Measures ANOVA

Source	Degree of Freedom (df)	Sum of Squares	Mean Square	F	Sig.
Within Subject	03	85.220	28.407	48.11	0.01
Error	147	86.780	0.590		

The F ratio of 48.11 calculated in Table 1 (a) indicates a statistically significant difference in mean scores on self-acceptance in elderly females of the experimental group in different study periods at 0.01 level of significance. It shows the effect of six month interventional physical exercise program on the improvement of self-acceptance in elderly women. To further analyse the difference in mean self acceptance scores of elderly women from the experimental group in different study periods, Least Significant Difference Test was conducted. Results are given in table 1(b).

Table 1(b)

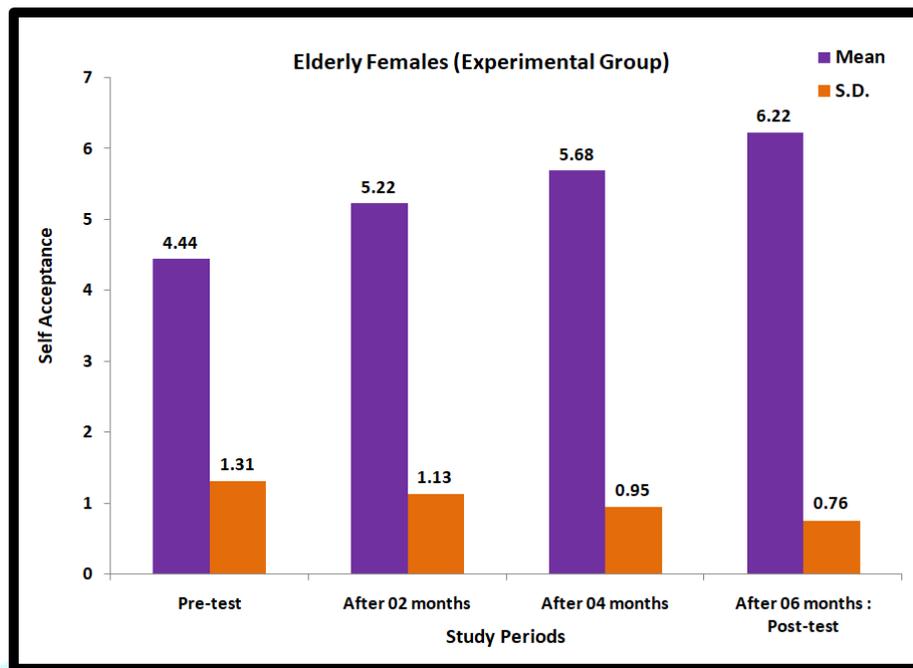
Pairwise Comparisons of Mean Self Acceptance Scores in the Experimental Group Across Study Periods - LSD Test, $p < .05$

Mean (I)	Mean (J)	Mean Difference (I-J)
Pre-test (M=4.44)	After 02 months (M=5.22)	-0.780*
	After 04 months (M=5.68)	-1.24*
	After 06 months (M=6.22)	-1.78*
After 02 months (M=5.22)	After 04 months (M=5.68)	-0.460*
	After 06 months (M=6.22)	-1.00*
After 04 months (M=5.68)	After 06 months (M=6.22)	-0.540*

* Significant at .05 level

Figure 1

Self-Acceptance in Elderly Females from Experimental Group Based on Different Study Period



A perusal of Mean differences with significance level gives the following scientific pieces of evidence-

- The mean pre-test scores on self-acceptance for elderly women of the experimental group was 4.44 and it was 5.22 after 02 months of the study period. It indicates a significant improvement in the self-acceptance of elderly females after 02 months of the study period as compared to the beginning of the study. The mean difference of -0.78 proves this finding at 0.05 level of significance.
- The mean pre-test scores on self-acceptance for elderly women of the experimental group was 4.44 and it was 5.68 after 04 months of the study period. It indicates a significant improvement in self-acceptance of elderly females after 04 months of the study period as compared to the beginning of the study. The mean difference of -1.24 proves this finding at 0.05 level of significance.
- The mean pre-test scores on self-acceptance for elderly women of the experimental group was 4.44 and it was 6.22 after 06 months of the study period (post-test). It indicates a significant improvement in the self-acceptance of elderly females after 06 months of the study period (posttest) as compared to the beginning of the study. The mean difference of -1.78 proves this finding at 0.05 level of significance.
- The mean self-acceptance score for elderly women of the experimental group after 02 months of study was 5.22 and it was 5.68 after 04 months of study period. It indicates a significant improvement in the self-acceptance of elderly females after 04 months of the study period as compared to what it was after 2 months of the study period. The mean difference of -0.46 proves this finding at 0.05 level of significance.
- The mean self-acceptance score for elderly women of the experimental group after 02 months of study was 5.22 and it was 6.22 after 06 months of study period. It indicates a significant improvement in the self-acceptance of elderly females after 06 months of the study period as compared to what it was after 4 months of the study period. The mean difference of -1.00 proves this finding at 0.05 level of significance.
- The mean self-acceptance score for elderly women of the experimental group after 04 months of study was 5.68 and it was 6.22 after 06 months of study period. It indicates a significant improvement in the self-acceptance of elderly females after 06 months of the study period as compared to what it was after 4 months of the study period. The mean difference of -0.54 proves this finding at 0.05 level of significance.

Table 2 depicts the Repeated Measures ANOVA statistics on self-acceptance in elderly women of the control group.

Table 2

**Descriptive Statistics of the Self-Acceptance Component of Positive Mental Health
in Control Group by Study Periods**

Study Periods	N	Self Acceptance (Control Group)	
		Mean	S.D.
Pre-test	50	4.10	0.95
After 02 months	50	4.36	1.00
After 04 months	50	5.16	1.18
After 06 months :Post-test	50	4.92	1.20

Table 2 (a) Within Subject Repeated Measures ANOVA

Source	Degree of Freedom (df)	Sum of Squares	Mean Square	F	Sig.
Within Subject	03	35.935	11.978	10.49	p<.01
Error	147	167.815	1.142		

The F ratio of 10.49 calculated in Table 2(a) indicates a statistically significant difference in mean self-acceptance scores of elderly females of the control group in different study periods at 0.01 level of significance. It shows that during six months of the study period, self-acceptance in elderly women of the control group increased significantly. To further analyse the difference in mean self-acceptance scores of elderly women from the control group in different study periods, The Least Significant Difference Test was conducted. Since the F-ratio is statistically significant, the analysis of mean differences through this test is justifiable. Results are given in Table 2(b).

Table 2(b)

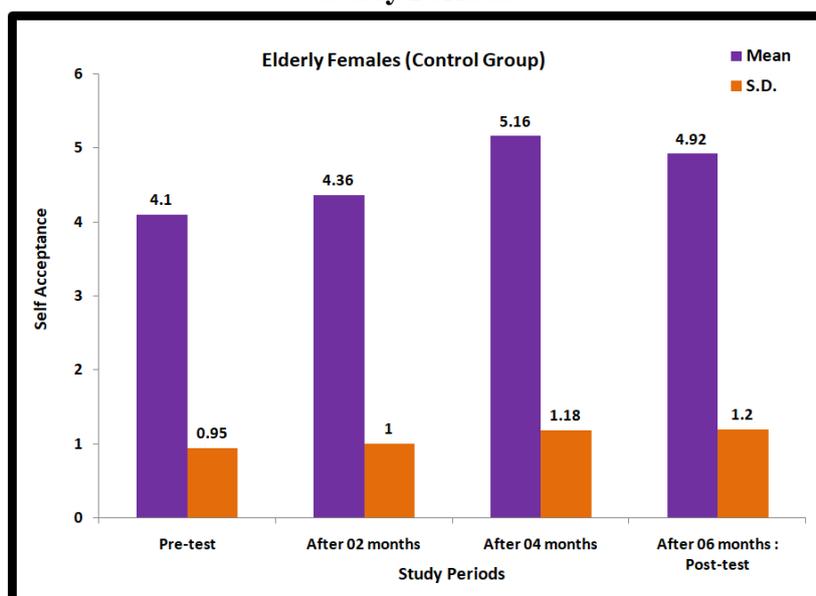
**Pairwise Comparisons of Mean Self Acceptance Scores in the Control Group Across Study Periods -
LSD Test, p<.05**

Mean (I)	Mean (J)	Mean Difference (I-J)
Pre-test (M=4.10)	After 02 months (M=4.36)	-0.260
	After 04 months (M=5.16)	-1.060*
	After 06 months (M=4.92)	-0.820*
After 02 months (M=4.36)	After 04 months (M=5.16)	-0.800*
	After 06 months (M=4.92)	-0.560*
After 04 months (M=5.16)	After 06 months (M=4.92)	0.240

* Significant at .05 level

Figure 2

Basic Statistical Value on Self-Acceptance in Elderly Females from Control Group Based on Different Study Periods



Perusal of Mean differences with significance level gives the following scientific pieces of evidence-

- The pre-test mean score on self-acceptance for elderly women of the control group was 4.10 and it was 4.36 after 02 months of the study period. The mean difference of -0.26 was statistically non-significant.
- The pre-test mean score on self-acceptance for elderly women of the control group was 4.10 and it was 5.16 after 04 months of the study period. It indicates a significant improvement in self-acceptance of elderly females after 04 months of the study period as compared to the beginning of the study. The mean difference of -1.060 proves this finding at 0.05 level of significance.
- The pre-test mean score on self-acceptance for elderly women of the control group was 4.10 and it was 4.92 after 06 months of the study period. It indicates a significant improvement in the self-acceptance of elderly females after 06 months of the study period as compared to the beginning of the study. The mean difference of -0.820 proves this finding at 0.05 level of significance.
- The mean score on self-acceptance for elderly women of the control group after 02 month was 4.36 and it was 5.16 after 04 months of the study period. It indicates a significant improvement in self-acceptance of elderly females after 04 months of the study period as compared to what it was at 02 months from the beginning of the study period. The mean difference of -0.800 proves this finding at 0.05 level of significance.
- The mean score on self-acceptance for elderly women of the control group after 02 month was 4.36 and it was 4.92 after 06 months of the study period. It indicate a significant improvement in self acceptance of elderly females after 06 months of the study period as compared to what it was at 04 months from the beginning of the study period. The mean difference of -0.560 proves this finding at 0.05 level of significance.
- The mean score on self-acceptance for elderly women of the control group after 04 month was 5.16 and it was 4.92 after 06 months of the study period. The mean difference of 0.24 was statistically non-significant but indicated decrease in self-acceptance in elderly females.

To analyse how six month interventional physical exercise program is effective in improving self-acceptance in elderly females it is necessary to compare the pre-post changes with respect to female elderly of the control group who are not part of six month interventional physical exercise program. To do this, a comparison of the gain score was done through an independent sample 't' test. The gain score was obtained by subtracting the pre-test scores from post-test scores. Results are given in Table 3.

Table 3

Comparison of Gain Scores (Post-Pre) on Self Acceptance in Elderly: Experimental vs. Control Group

Self Acceptance	Experimental Group (N=50)		Control Group (N=50)		‘t’	Sig.
	Mean	S.D.	Mean	S.D.		
Gain Score (Post - Pre-Test)	1.78	1.35	0.82	1.62	3.20	0.01

It was observed from Table 3 that the mean gain in the self-acceptance dimension was higher in elderly females from the experimental group compared to elderly females of the control group. The calculated ‘t’ value = 3.20 gives statistical evidence that after participating in six-month physical exercise program, self-acceptance in elderly females from the experimental group (Mean gain = 1.78) improved significantly ($p < .01$) as compared to elderly females from the control group (Mean gain = 0.82).

The results supported the beneficial impact of interventional physical exercise programs on enhancing elderly women. Physical exercise is known to improve mobility, strength and flexibility in the elderly. This improved physical condition gives the elderly a sense of autonomy and self-worth. It has also been known that exercise is conducive in stimulating endorphins that reduce feelings of stress and anxiety thereby creating a positive mental state. The result of the present study has scientific support of studies conducted by Schmid et al. (2010), Gothe and McAuley (2016) and Motaharinezhad et al. (2016).

Conclusion

The work conducted on the elderly population related to their mental health. This experimental study indicates that one dimension of mental health i.e. self-acceptance was prominently developed due to a physical education program of six-month. It may be because while performing physical activity subjects may realise their capacities. Hence it can be concluded that the six-month interventional physical exercise program proved effective in improving the self-acceptance component of positive mental health among elderly women. Therefore, integrating a structured physical exercise routine into their daily lives is recommended to promote greater self-acceptance.

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